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BEFORE THE

FEDERAL COMMUNICATIONS COMMISSION

WASHINGTON, DC 20554

In the Matter of	)	
	)	
Wireless Telecommunications Bureau Seeks	)	CC Docket No. 94-102
Comment on Phase I E911 Implementation	)	
Issues	)	

To: Wireless Telecommunications Bureau

COMMENTS

VOICESTREAM WIRELESS CORPORATION

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COMMENTS OF VOICESTREAM WIRELESS CORPORATION

VoiceStream Wireless Corporation ("VoiceStream")[1] hereby files comments in response to the recent Public Notice seeking comment on a request filed by the King County, Washington E-911 Program Office to specify the demarcation point between PSAP and wireless carrier fiscal responsibilities for 911 network upgrades.[2] As discussed more fully below, VoiceStream submits that the mobile telephone switching center ("MTSO") represents the clear demarcation point between Public Safety Answering Points ("PSAPs") and wireless carrier fiscal responsibility for the 911 network.

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[1] Based in Bellevue, Washington, VoiceStream is the fastest growing provider of personal communications services ("PCS") in the United States. VoiceStream provides PCS throughout the United States using Global System for Mobile Communications ("GSM") technology. As a result of recent mergers with both Omnipoint Corporation and Aerial Communications, VoiceStream's coverage area would allow it to serve three out of every four people in the United States.

[2] *See* FCC Public Notice, *Wireless Telecommunications Bureau Seeks Comment on Phase I E911 Implementation Issues*, CC Docket No. 94-102, DA 00-1875 (August 16, 2000).

I. BACKGROUND

A. History of Landline E911 Networks

The 911 emergency calling system was developed in the 1960s in response to findings of President Lyndon Johnson's Commission on Law Enforcement and Administration of Justice.[3] In 1967, the Crime Commission produced a 308-page report that offered more than 200 recommendations, including recommendations that led to the development of 911 emergency calling systems.[4]

In January 1968, AT&T announced that the digits 9-1-1 would be used as an emergency telephone number within its service areas.[5] Following AT&T's announcement, states began passing legislation encouraging or mandating local installation of 911 systems. The first such system was installed in Haleyville, Alabama on February 16, 1968.[6] In general, 911 systems were designed by state or local commissions. The commissions then negotiated with local exchange carriers ("LECs") to provide the components of the 911 system. The 911 network components consisted of all communications facilities necessary to carry a 911 call from a LEC end office to a PSAP. In return for building the 911 network, the public safety commissions agreed to lease all of the elements of the network from the LEC pursuant to state tariffs. Thus,

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[3] *See* SEASKATE, INC., *The Evolution and Development of Police Technology, A Technical Report prepared for The National Committee on Criminal Justice Technology National Institute of Justice* (July 1, 1998) <http://www.nlectc.org/txtfiles/policetech.html>.

[4] *Id. See History of 911* <http://www.co.pinellas.fl.us/ces/history.html>.

[5] *See History of 911* <http://www.co.pinellas.fl.us/ces/history.html>. The concept of a universal telephone number originated in England where, since 1937, 999 is dialed for emergency services. *Id.*

[6] *See* Alabama Chapter of NENA, *World's First 9-1-1 Call* <http://www.al911.org/first_call.htm>.

LECs were reimbursed for all the expenditures associated with the construction and operation of facilities between the end office and the PSAP, including the costs of: the selective router; trunks between the end office and the selective router; and trunks between the selective router and the PSAP. In fact, many state tariffs, including those in force in Washington State, provided that elements of the 911 network could be provisioned only by an entity with "public safety responsibility by law to respond to emergency calls."[7]

B. Development of Wireless E911 Obligations

In 1994, the FCC initiated CC Docket No. 94-102 to ensure that "mobile radio service users on the public switched telephone network have the same level of access to 911 emergency services as wireline callers."[8] In essence, the Commission wanted to ensure that when a provider of wireless voice service "plugs into" the existing PSTN, wireless callers using the network will have the ability to utilize the existing 911 emergency calling network.

In this regard, the Commission adopted rules requiring wireless carriers to provide location information with 911 calls ("E911") from wireless handsets to permit a PSAP to send assistance to a caller's actual location. The Commission recognized, however, that implementation of these new E911 obligations would prove costly. Thus, implementation was initially "contingent upon the adoption of a cost recovery mechanism" whereby wireless carriers

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[7] *See, e.g.,* Qwest Corporation Tariff WN U-40, Section 9.2.1.A.2 (effective Aug. 30, 2000). Generally, such entities would be "[a] municipality, state or local governmental unit, or an authorized agent of one or more of these units to whom authority has been lawfully delegated." *Id.* Thus, in order to effectuate King County's plan to shift fiscal responsibility for elements of the 911 network to wireless carriers, LEC tariffs would have to be amended. Not surprisingly, King County has requested such revisions to tariffs in Washington state.

[8] *Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, CC Docket No. 94-102, *Notice of Proposed Rulemaking*, 9 F.C.C.R. 6170, 6176 (1994).

and PSAPs could recover their respective implementation costs.[9] For wireless carriers, these implementation costs consist of upgrading their wireless networks to associate location information with wireless calls. Implementation costs for PSAPs consist of making the upgrades necessary to utilize and receive location information associated with wireless calls.[10]

Because of delays associated with the adoption of cost recovery mechanisms at the state and local level, PSAPs urged the Commission to reconsider its decision to tie implementation of E911 to the adoption of cost recovery mechanisms. PSAPs claimed that they were ready, willing, and able to receive E911 information, but wireless carriers were refusing to implement these services because cost recovery mechanisms were not yet in place. The PSAPs generally argued that carriers should not be permitted to delay implementation because they could immediately recover their implementation costs directly from subscribers. Over the objections of the wireless community, the Commission agreed with PSAPs:

> we modify our rule to [remove the condition] that a mechanism for *carrier* cost recovery be in place before a carrier's obligation to provide E911 services is triggered.[11]

The Commission did retain, however, the requirement that a mechanism for PSAP cost recovery be in place before a carrier can be required to implement E911 services. According to the Commission:

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[9] *Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, CC Docket No. 94-102, *Report and Order and Further Notice of Proposed Rulemaking*, 11 F.C.C.R. 18676, ¶89 (1996).

[10] *See* 47 C.F.R. § 20.18(f) (the obligation to provide E911 applies "only if the administrator of the designated Public Safety Answering Point has requested the [E911] services . . . and is capable of receiving and utilizing the data elements associated with the service. . . .").

[11] *Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, CC Docket No. 94-102, *Second Memorandum Opinion and Order*, 14 F.C.C.R. 20850, ¶23 (1999) ("*Recon. Order*") (emphasis added).

> the adequate funding of PSAPs is a critical element in ensuring timely E911 implementation. Without adequate funding, PSAPs may not be able to finance expenditures required to upgrade their hardware or software capabilities to receive and use Phase I and Phase II information, as well [as] *to finance recurring costs that may be associated with the additional network services*. In originally conditioning the carrier's obligation on the receipt of a request from a PSAP with the capability to receive and utilize the information, the Commission recognized that implementation will require investment in facility and equipment upgrades to be able to request the service. *We reaffirm the finding that implementation of our E911 schedule generally depends on the action of State and local authorities, and such actions, we find, would include adequately funding their PSAPs.*[12]

Thus, PSAPs remained responsible for making the upgrades necessary to receive and utilize location information associated with wireless calls.

C. King County Request

The King County "clarification" request forming the basis for the instant public notice is an attempt to again revisit the cost recovery requirement by streamlining public safety obligations and imposing new requirements on wireless carriers. In essence, the request is an untimely petition for reconsideration of the adoption of Section 20.18(f), which requires PSAPs to bear the burden of upgrading their networks to be capable of receiving location information for wireless calls.

King County is attempting to narrowly define its E911 network responsibilities and require wireless carriers to foot the bill for virtually all wireless E911 implementation costs. The Commission has already rejected this approach and King County has presented no compelling reason why a new approach is now warranted. Moreover, no rationale has been provided for creating different fiscal demarcation points for 911 networks based solely on the type of carrier

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[12] *Id.* at ¶66 (emphasis added).

involved — demarcation at the serving end office for landline carriers and a different demarcation point for wireless carriers.

II. THE MTSO CONSTITUTES THE DEMARCATION POINT BETWEEN PSAP AND WIRELESS NETWORKS

The record in this proceeding establishes that there is a clear demarcation point between PSAP and wireless networks — the wireless equivalent of the end office, the mobile telephone switching center ("MTSO"). As noted above, PSAP responsibility for the 911 network extends to all elements between an end office and the PSAP necessary for completing a 911 call. The Commission has consistently treated MTSOs as the equivalent of a landline end office.[13] No rationale has been provided for treating MTSOs differently in the 911 context. Accordingly, consistent with landline precedent, PSAP responsibility for the 911 network extends to all elements between the calling center and the wireless end office/MTSO. From the demarcation perspective, it simply is irrelevant whether the end office is associated with a landline or wireless network.

Consistent with this analysis, the Emergency Access Position Paper forming the basis for the wireless 911 docket included the following diagram depicting the 911 network in a combined wireline/wireless environment.

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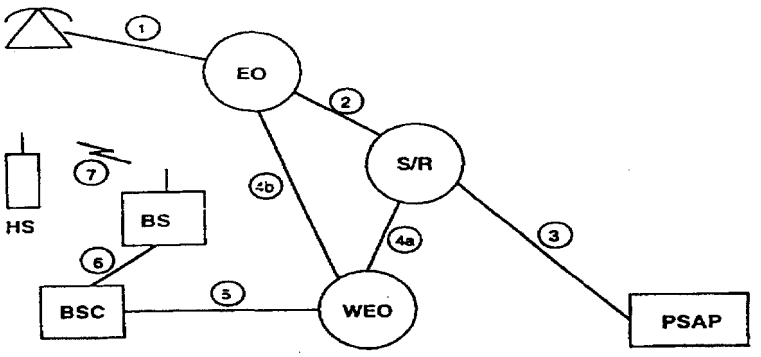
[13] *See Need to Promote Competition and Efficient Use of Spectrum for Radio Common Carrier Services, Memorandum Opinion and Order on Reconsideration*, 4 F.C.C.R. 2369 (1989).



EO - end office (e.g., Class 5) S/R - selective router
HS - handset BS - base station
BSC - base station controller WEO - wireless end office
PSAP - public safety answering point

Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, CC Docket No. 94-102, *Notice of Proposed Rulemaking*, 9 F.C.C.R. 6185, 6190 (1994) (Appendix A — *PCIA, APCO, NENA and NASNA Emergency Access Joint Paper*) ("*APCO Emergency Access Paper*"). The APCO Emergency Access Paper clearly indicates that the link between a wireline telephone and the wireline end office ("EO") is analogous to the links between (i) a wireless handset (HS) and a base station (BS), (ii) the base station and the base station controller (BSC), and (iii) the base station controller and the MTSO, otherwise known as the wireless end office ("WEO").[14] Consistent with this analogy, wireless carriers have fiscal responsibility only for modifications necessary to provide E911 over these links. Once the call is handed off from the MTSO/end office to the PSAP, the PSAP's fiscal responsibility for the 911 network begins. Moreover, once wireless 911 calls reach the MTSO, PSAPs are responsible for any modifications necessary to "receive and utilize" the E911 call data.[15]

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[14] *APCO Emergency Access Paper*, 9 F.C.C.R. at 6190.

[15] *See* 47 C.F.R. § 20.18(f).

Once a 911 call gets to an MTSO, it is handed off to a landline trunk. No wireless facilities are used. Moreover, wireless carriers do not have authority to construct and deploy wireline trunks, they must be ordered from LECs. Consistent with existing tariffs, however, the trunks used to connect an end office and the selective router in a 911 calling network may only be provisioned by a PSAP or similar entity with "public safety responsibility by law to respond to emergency calls."[16] Thus, CMRS carriers are prohibited from provisioning these facilities from some LECs. Even if CMRS carriers could provision these facilities, however, they should not be required to do so. There is no reason to inject CMRS carriers between the LECs and PSAPs with respect to the provisioning of landline facilities necessary to support the PSAP 911 calling network.

Although PSAPs must pay for modifications between the wireless end office and calling centers, the Commission has retained the PSAP cost recovery requirement. Thus, PSAPs need not order links between an MTSO and the PSAP network until a mechanism is in place for recovering the cost of the facilities.[17]

The Commission has previously acknowledged that PSAPs would incur substantial costs with respect to receiving wireless 911 calls and cited to comments submitted by CTIA as evidence of these costs. According to CTIA's comments:

> As noted in the [consensus] Report, "[g]iven the highly localized nature of PSAP services, . . . the PSAP equipment, trunking, routing infrastructure and ALI databases historically were designed as an intra-LATA operation and performance [was] optimized for 7-digit dialing patterns." The bulk of these 9-1-1 selective routers (sometimes referred to as "9-1-1 access tandems"); ALI databases, and 9-1-1 trunks, as well as the PSAPs' own equipment, will have to be upgraded *at the PSAPs' own expense* to handle

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[16] Qwest Corporation Tariff WN U-40, Section 9.2.1.A.2.

[17] 47 C.F.R. § 20.18(f); *Recon. Order* at ¶66.

> the additional ANI and ALI information that will be provided by wireless carriers.[18]

This approach is consistent with actions by PSAPs where cost recovery is available. In Connecticut, for example, PSAPs have ordered and paid for upgrades from the LECs which enable wireless E911 call delivery via call associated signaling ("CAS") technology.[19] Similarly, LEC tariffs in Washington State specify that only PSAPs are allowed to order and pay for components of the 911 network.[20]

PSAPs generally have three options with respect to the upgrades necessary for receiving wireless E911 data. First, they can perform a major upgrade which allows the 911 network to handle the 20 digits necessary for wireless E911. In addition to addressing wireless E911, this upgrade also addresses number portability issues faced by PSAPs and it is a critical element in the move to Advanced Intelligent Networking, which has long been a goal of public safety. The fact that this upgrade provides PSAP-only benefits, including benefits in areas totally unrelated to wireless E911, supports the position that PSAPs should be responsible for footing the bill, subject to reimbursement pursuant to state or local cost recovery mechanisms.

If a PSAP wishes to avoid a major upgrade, it can perform a minor 911 network modification by adding hybrid box functionality.[21] This allows carriers to deliver E911 calls in the most efficient manner and permits PSAPs to avoid the cost of a major upgrade. In most cases this upgrade is made available by the LEC, who then manages this network element for the

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[18] CTIA Comments at 2 (Sept. 14, 1999) (emphasis added).

[19] Conn. Agencies Regs. § § 28-24-9 (a) & (b), 28-24-10(g)&(h), 28-24-11.

[20] Qwest Corporation Tariff WN U-40, Section 9.2.1.A.2.

[21] The hybrid box receives E911 calls from wireless carriers via CAS and then breaks the call into the separate elements needed for non-call associated signaling ("NCAS").

PSAP just as they manage the remaining 911 network. PSAPs generally pay for these services pursuant to LEC tariffs. In fact, as discussed above, some LEC tariffs (including those in Washington State) prohibit non-PSAPs from provisioning the 911 network components.

Finally, a PSAP can perform a minor 911 network upgrade by adding the service control point ("SCP") functionality which enables NCAS delivery.[22] Again, this option allows the PSAP to avoid the cost of a major upgrade but it requires unique signaling capabilities and network interconnections at the wireless carrier switch. Additional data trunks from the MTSO to the SCP are also required for NCAS solutions.

Each of the aforementioned modifications options has its own technical and financial impacts, and as the entities responsible for choosing the modifications, PSAPs should assume responsibility for addressing these impacts. Wireless carriers should only be responsible for using the technology deployed at their switches to make data available and the PSAP should be responsible for the technological upgrades and transport facilities necessary to move the data from the wireless switch to the PSAP.

III. THE END OFFICE FORMED THE DEMARCATION POINT BETWEEN LEC AND PSAP FISCAL RESPONSIBILITY DURING THE TRANSITION FROM BASIC TO ENHANCED 911 SERVICES

There is very strong precedent for the division of costs in the landline 911 implementation. PSAPs accepted the financial responsibility for all upgrades throughout the 911 calling network when they moved from basic 911 to enhanced 911 in the landline environment. The PSAPs directed the LECs, as their network managers, to make the routing, signaling and database upgrades necessary to implement this improvement. In most cases these improvements

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[22] In landline 911, the selective router uses static location data drawn from the selective routing database to determine call routing. In the wireless environment, the SCP pre-processes wireless calls to obtain location data and then sends this data to the selective router.

resulted in higher costs in the form of LEC E911 service charges and the PSAPs pay the LECs for these costs via a monthly 911 service charge which is based on the number of customers served by the PSAP.[23]

Consistent with this approach, PSAPs should bear the fiscal responsibility for the cost of all upgrades and necessary connections from the wireless end office/MTSO to the PSAP.

IV. ELIMINATION OF CARRIER COST RECOVERY CHANGED WIRELESS CARRIER DEPLOYMENT PLANS

King County points out that new technologies have been developed to handle the twenty digits required for wireless E911 and that "[t]hese technologies have been deployed throughout the nation by wireless carriers as they implement Phase I service."[24] The technologies referred to are the SCP and hybrid box functionality required for NCAS or hybrid E911 call delivery. Although it is absolutely true that some carriers opted to foot the expense of implementing these technologies, *these decisions were made when carriers were not required to supply Phase I until a carrier cost recovery mechanism was in place.* In other words, carriers opted for these solutions because they were certain to recover their costs.[25] Consistent with the landline 911 experience, some wireless carriers accepted responsibility for providing the SCP functionality with the understanding that they would manage these elements and be paid for performing this role in the same manner in which the LECs have traditionally been paid in the context of landline

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[23] The money for paying these costs is usually raised through surcharges, property taxes, or bond issues.

[24] King County Letter at 1-2.

[25] APCO previously argued that carrier cost recovery should be eliminated so that carriers would not have an incentive to "gold-plate" their E911 solutions. APCO Addendum Regarding Cost Recovery, CC Docket No. 94-102, at 3 (Aug. 9, 1999). This same rationale would apply to PSAPs if the wireless end office/MTSO were not the fiscal demarcation point for maintenance of the 911 network.

911. Unfortunately, carriers who took this proactive step in the interest of speeding the deployment of Phase 1 were left in the lurch when carrier cost recovery was eliminated as a prerequisite to PSAP service requests.[26]

Having potentially lost their funding when the rules changed, carriers with third party contracts for SCP services now face other problems arising from these agreements. First, they continue to be liable for the monitoring, troubleshooting and repair of the SCP. Even if the third party is contractually bound to fulfill some of these responsibilities, the wireless carrier is the entity facing Commission sanctions if problems arise. Second, carriers who provide SCP services expose themselves to additional responsibility for wireless E911 implementation. If the third party vendor's solution fails to interface properly with the existing 911 network or PSAP equipment, the carrier, as the entity required to provide wireless E911 by the FCC, faces possible fines and other FCC sanctions. Third, some carriers have been unable to obtain reimbursement from PSAPs for the third party costs associated with their nationwide solutions. These PSAPs argue that they do not need the functionality provided by the third party. In some cases the PSAP will not even reimburse the carrier for the administrative services provided by the third party vendor even if the carrier separated these costs from the SCP costs. This places the carrier in a position in which they will not get cost recovery while their competitors, who do not have third party costs, are fully reimbursed.

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[26] Unfortunately, elimination of cost recovery also eliminated the incentive for new "national" E911 solutions.

CONCLUSION

VoiceStream urges the Commission to clarify that the fiscal responsibility for 911 services is split at the end office. Both the Commission and public safety entities have acknowledged that MTSOs are the equivalent of LEC end offices. Accordingly, carriers are responsible for delivering 911 data to the MTSO/end office; PSAPs are responsible for all other aspects of the 911 network, including any modifications necessary to receive and utilize the 911 data, but can recover those costs through state and local cost recovery mechanisms.

In the landline 911 context, PSAPs order and pay for all elements of the 911 calling system between an end office and their calling centers. There is no reason for treating wireless end offices differently from wireline end offices with respect to 911 issues. Accordingly, PSAPs should be required to pay for and obtain all elements of the 911 system between the PSAP itself and an end office (whether wireless or wireline).

Respectfully submitted,

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